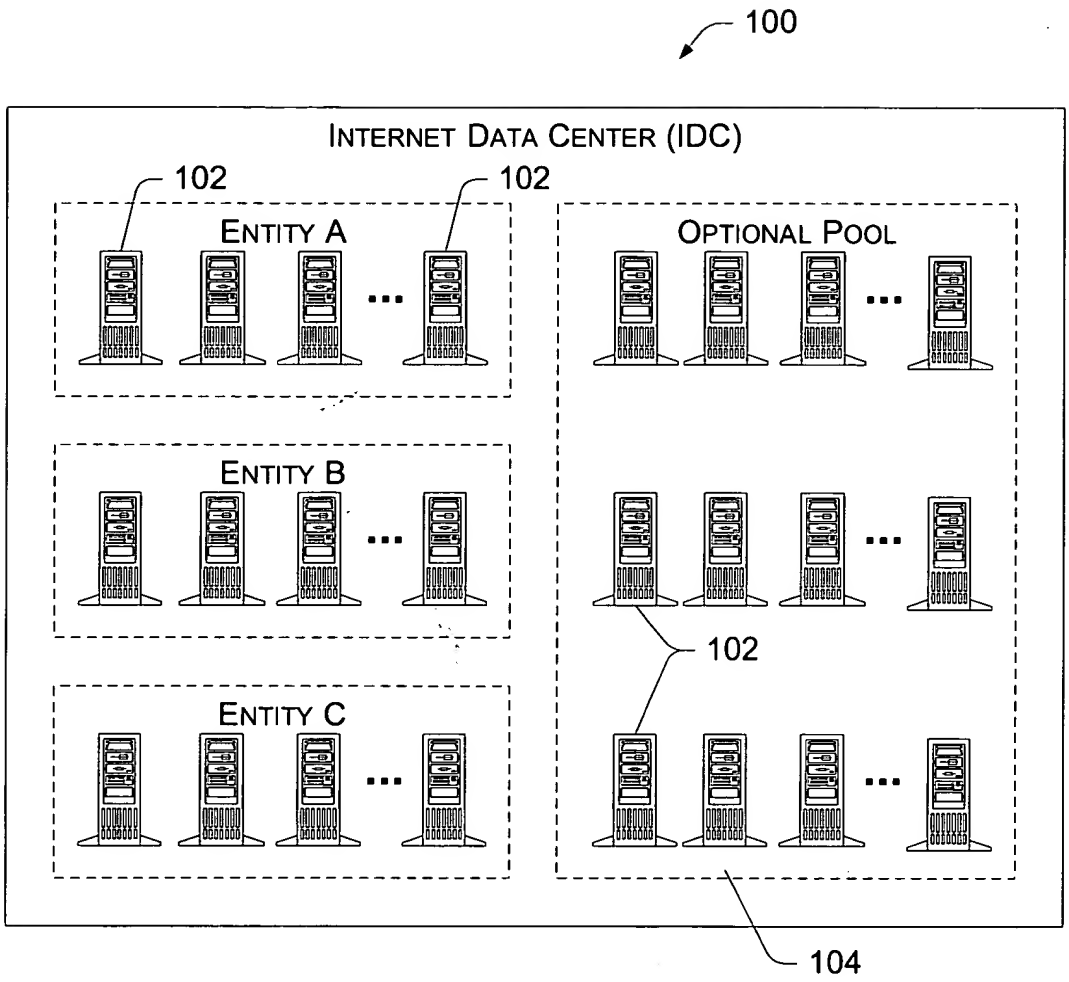

Fig. 1
Prior Art

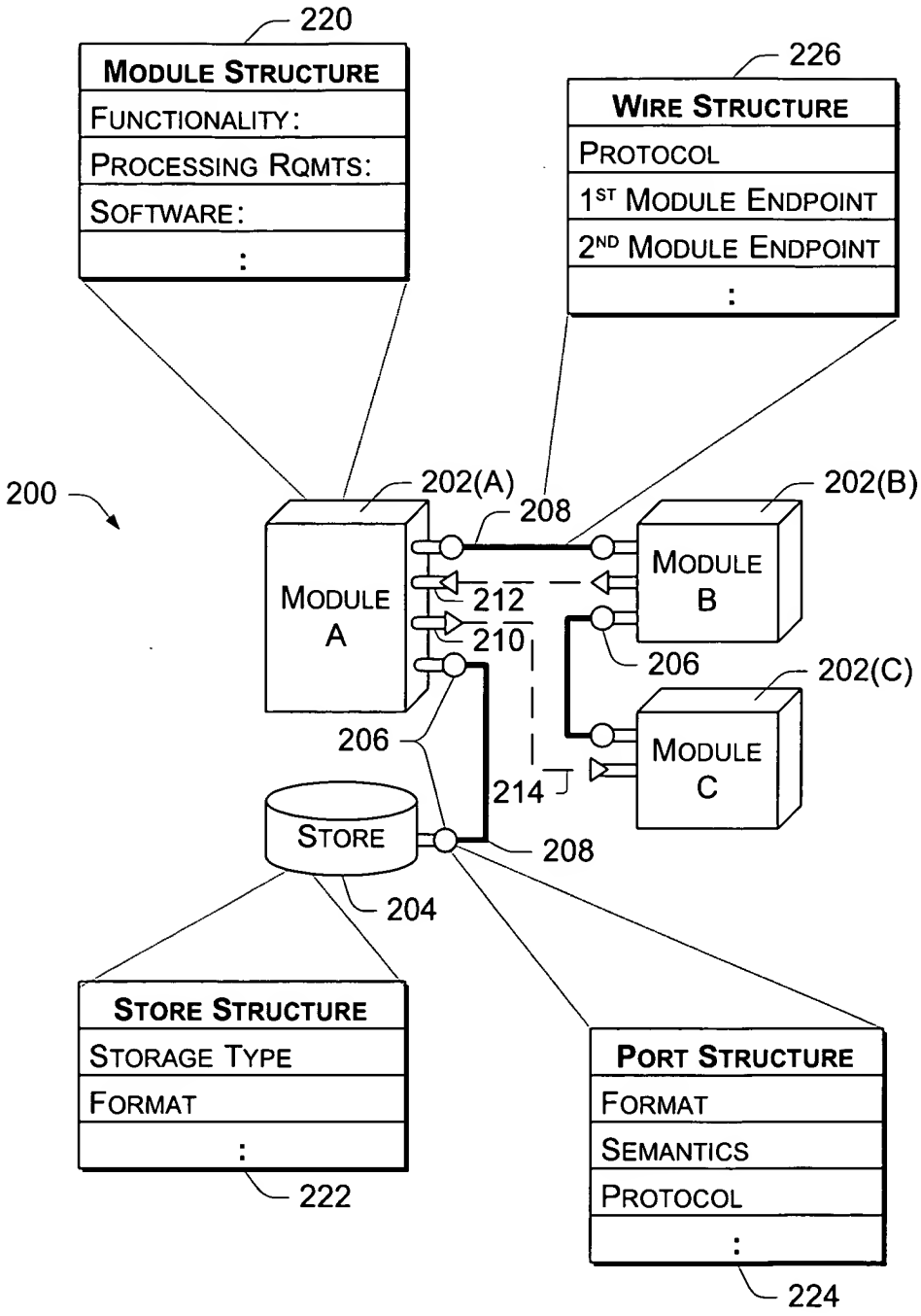
220
MODULE STRUCTURE
FUNCTIONALITY:
PROCESSING RQMTS:
SOFTWARE:
:
226
WIRE STRUCTURE
PROTOCOL
1ST MODULE ENDPOINT
2ND MODULE ENDPOINT
:
200
202(A)
208
202(B)
MODULE A
212
210
MODULE B
206
202(C)
206
MODULE C
214
STORE
208
204
STORE STRUCTURE
STORAGE TYPE
FORMAT
:
222
PORT STRUCTURE
FORMAT
SEMANTICS
PROTOCOL
:
224

Fig. 2

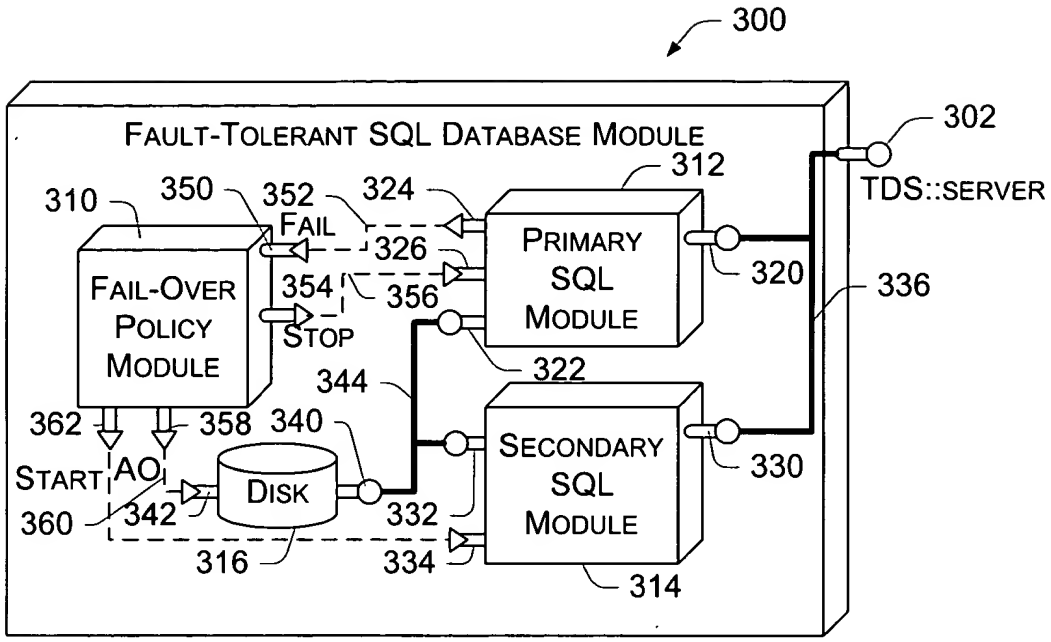
300
FAULT-TOLERANT SQL DATABASE MODULE
302
TDS::SERVER
312
310
350
352
324
FAIL
326
FAIL-OVER POLICY MODULE
354
356
STOP
PRIMARY SQL MODULE
320
336
322
344
362
358
340
SECONDARY SQL MODULE
330
START
AO
DISK
360
342
332
316
334
314

Fig. 3

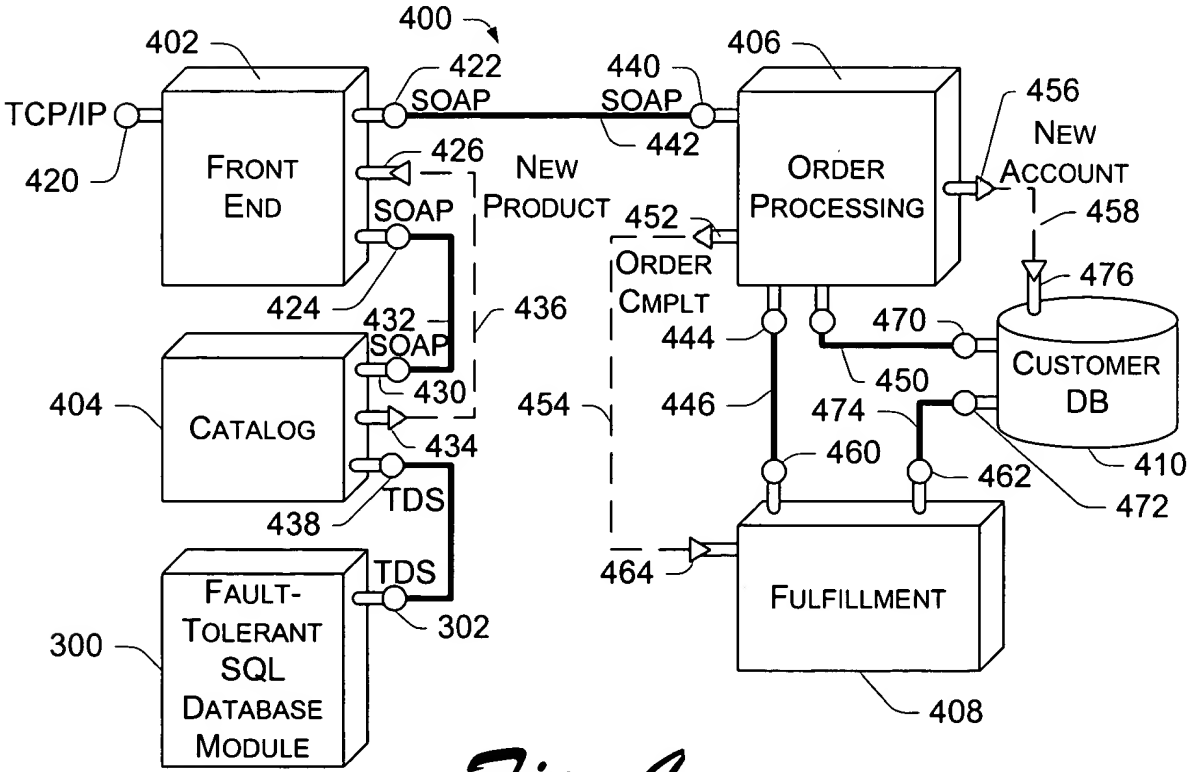
400
402
406
422
SOAP
440
SOAP
442
456
NEW ACCOUNT
TCP/IP
420
FRONT END
426
NEW PRODUCT
SOAP
ORDER PROCESSING
452
458
ORDER CMPLT
476
424
432
436
SOAP
444
470
CUSTOMER DB
404
CATALOG
430
454
446
450
474
434
460
462
410
TDS
472
438
464
TDS
FULFILLMENT
300
FAULT-TOLERANT SQL DATABASE MODULE
302
408

Fig. 4

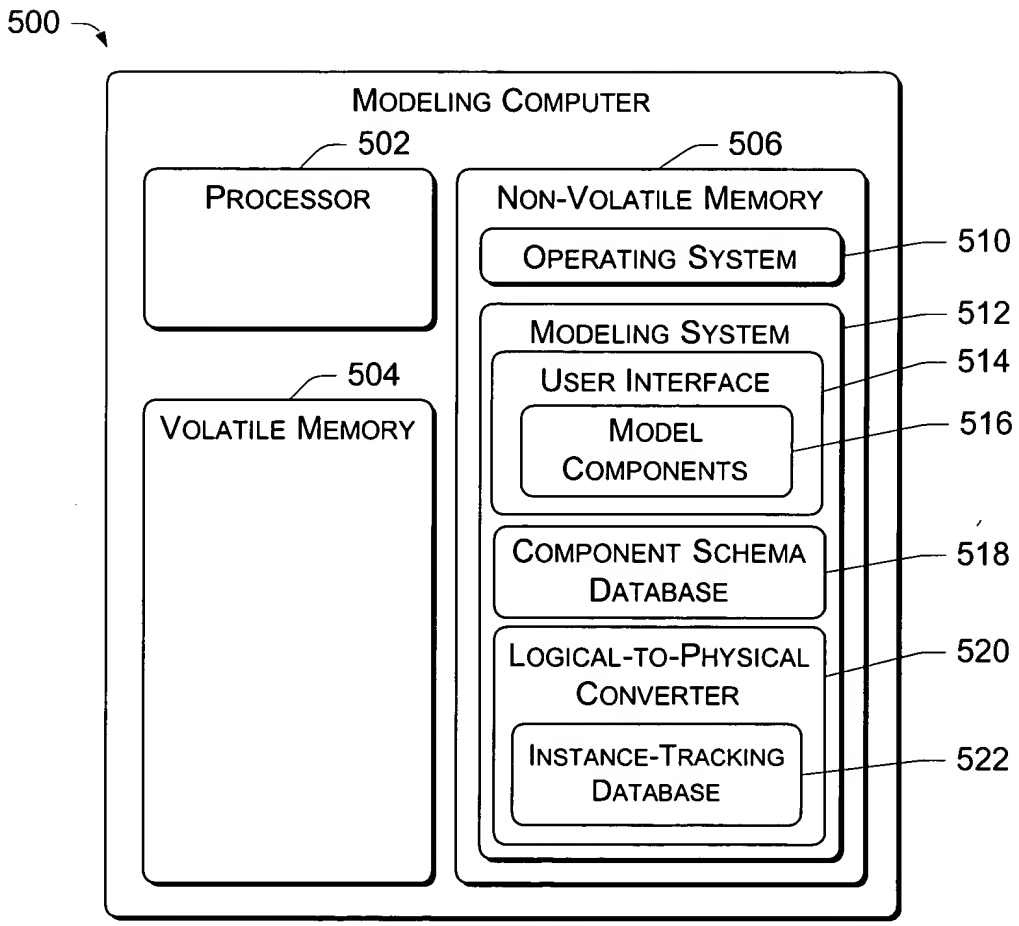
500
MODELING COMPUTER
502
PROCESSOR
504
VOLATILE MEMORY
506
NON-VOLATILE MEMORY
OPERATING SYSTEM
510
MODELING SYSTEM
512
USER INTERFACE
514
MODEL COMPONENTS
516
COMPONENT SCHEMA DATABASE
518
LOGICAL-TO-PHYSICAL CONVERTER
520
INSTANCE-TRACKING DATABASE
522

Fig. 5

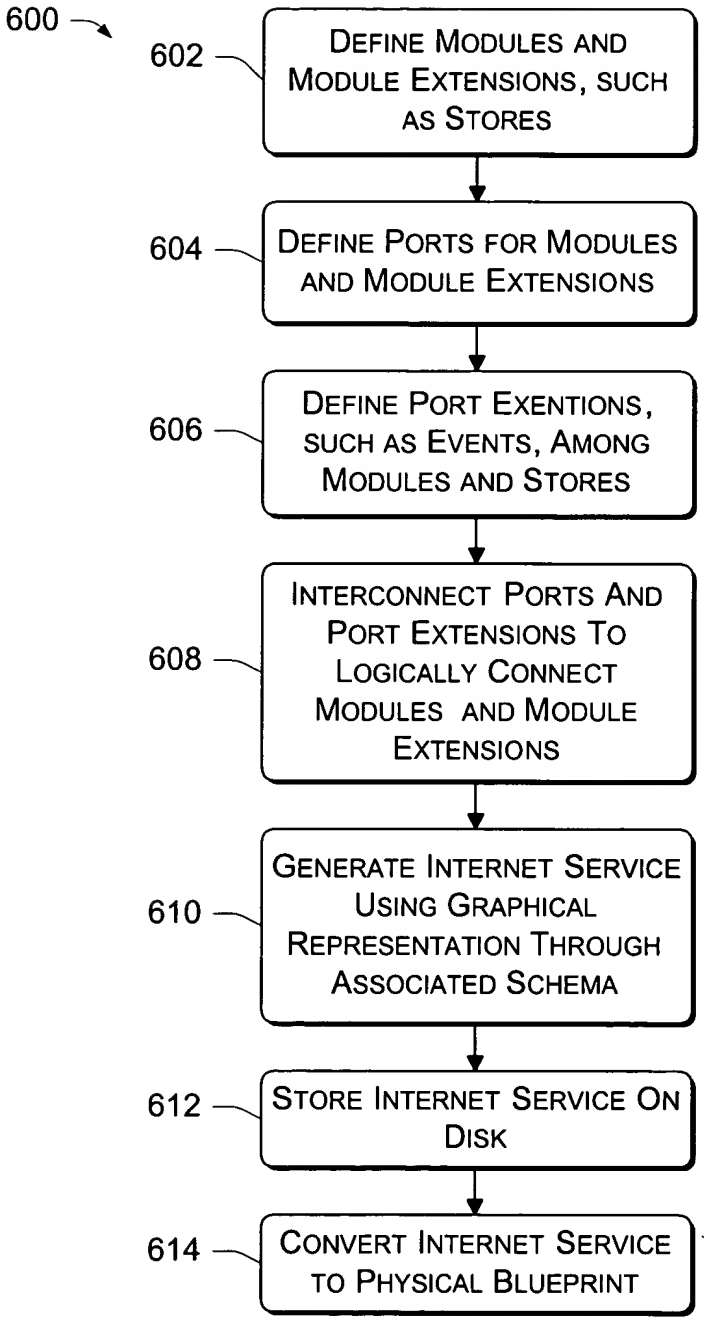
600
602
Define Modules and Module Extensions, such as Stores
604
Define Ports for Modules and Module Extensions
606
Define Port Exentions, such as Events, Among Modules and Stores
608
Interconnect Ports And Port Extensions To Logically Connect Modules and Module Extensions
610
Generate Internet Service Using Graphical Representation Through Associated Schema
612
Store Internet Service On Disk
614
Convert Internet Service to Physical Blueprint

Fig. 6

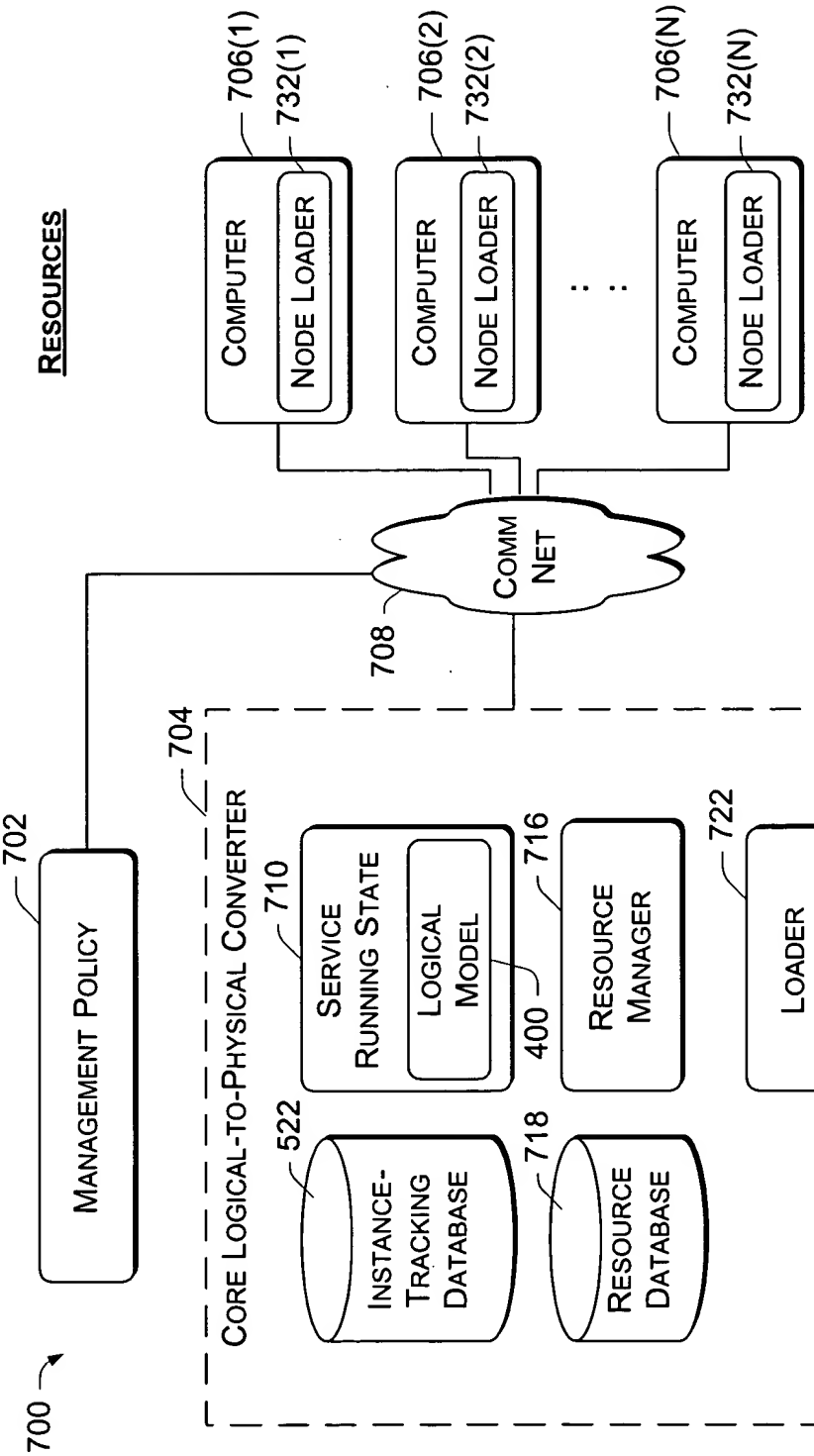
RESOURCES
COMPUTER
NODE LOADER
706(1)
732(1)
706(2)
732(2)
706(N)
732(N)
COMM NET
708
704
CORE LOGICAL-TO-PHYSICAL CONVERTER
MANAGEMENT POLICY
702
SERVICE RUNNING STATE
LOGICAL MODEL
710
400
RESOURCE MANAGER
716
LOADER
722
INSTANCE-TRACKING DATABASE
522
RESOURCE DATABASE
718
700

Fig. 7

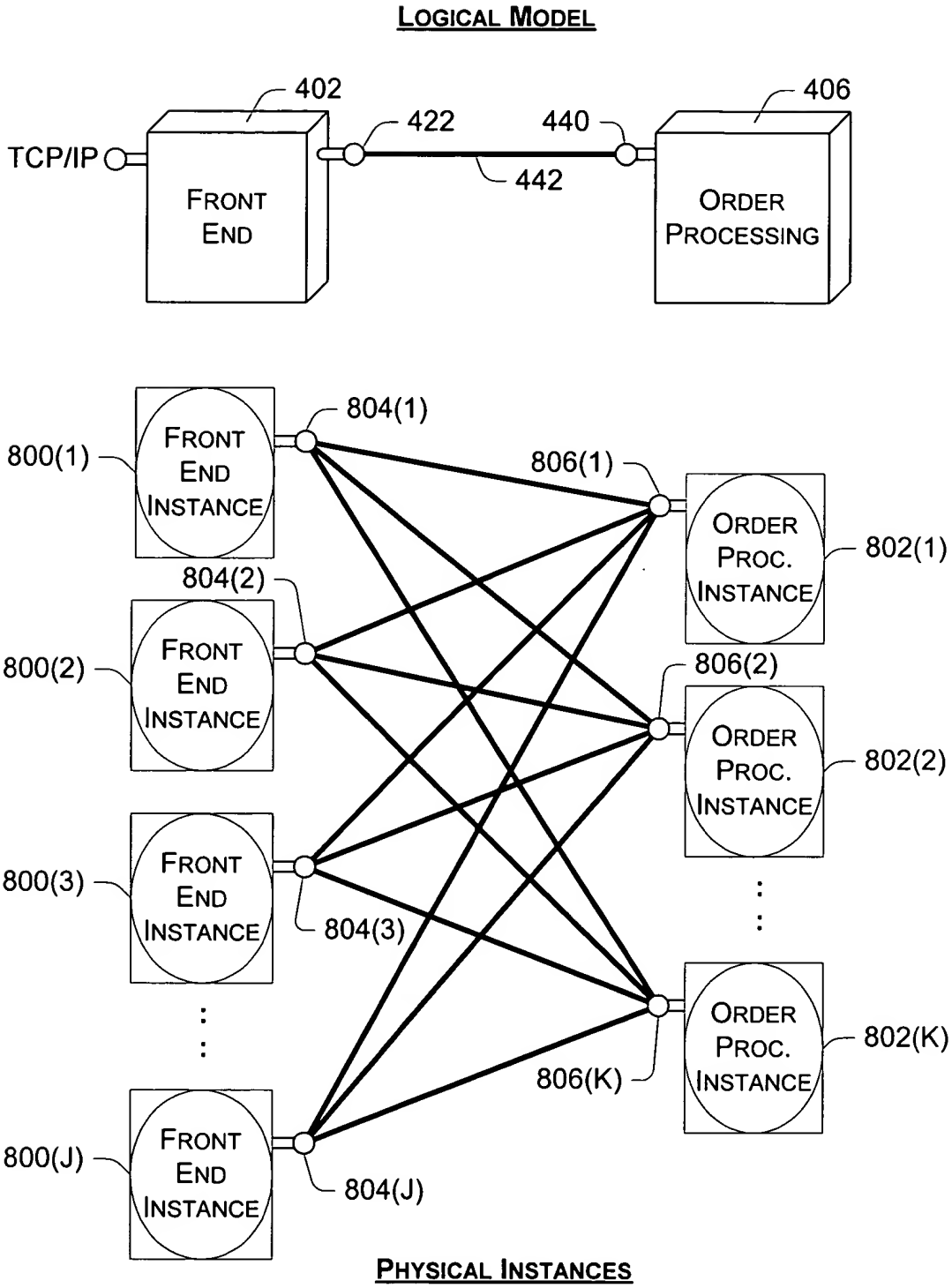
LOGICAL MODEL
402
406
422
440
442
TCP/IP
FRONT END
ORDER PROCESSING
800(1)
FRONT END INSTANCE
804(1)
806(1)
ORDER PROC. INSTANCE
802(1)
804(2)
800(2)
FRONT END INSTANCE
806(2)
ORDER PROC. INSTANCE
802(2)
800(3)
FRONT END INSTANCE
804(3)
ORDER PROC. INSTANCE
802(K)
806(K)
800(J)
FRONT END INSTANCE
804(J)
PHYSICAL INSTANCES

Fig. 8

900

902

MODULE TABLE

INSTANCE ID	MODEL COMPONENT	NODE ID	S/W TYPE	S/W ID	ID OF PORT(S)	PROTOCOL
A	FRONT END	123	FE, VER. 3.1	K123	A1, A2, A3	HTTP, TCP
B	FRONT END	332	FE, VER. 3.1	K124	B1, B2, B3	HTTP, TCP
:	:	:	:	:	:	:
ZA	ORDER PROC.	14	OP, VER. 1.4	3B58	ZA1, ZA2	HTTP
ZB	ORDER PROC.	854	OP, VER. 1.4	3B59	ZB1, ZB2	HTTP

904

PORT TABLE

PORT ID	MODEL COMPONENT	NODE ID	NETWORK ADDRESS	INSTANCE ID	PROTOCOL	WIRE ID
A1	FE PORT	123	PORT 80	A	HTTP	W115
:	:	:	:	:	:	:

906

WIRE TABLE

WIRE ID	MODEL COMPONENT	NODE ID	PORT ID	INSTANCE ID	PROTOCOL
W115	FE-TO-OP WIRE	123	A2	A	SOAP
		14	ZA1	ZA	
:	:	:	:	:	:

Fig. 9

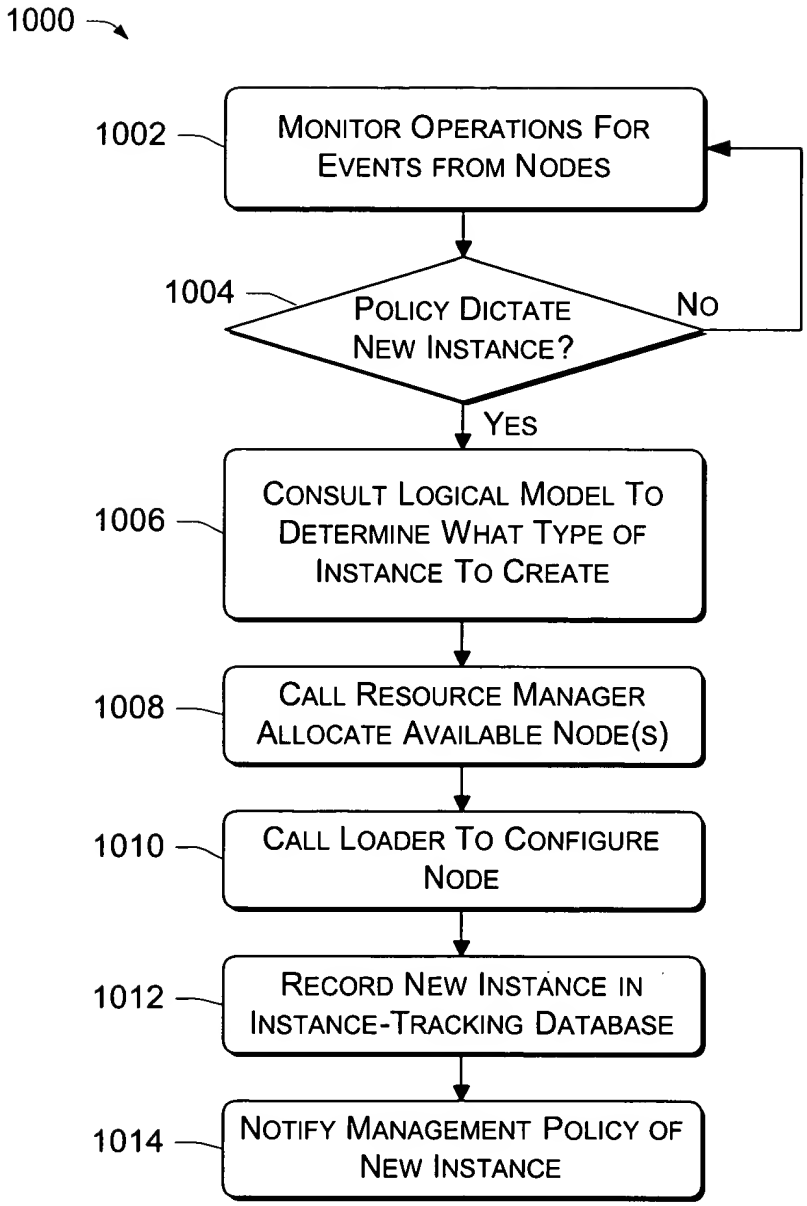
1000
1002
Monitor Operations For Events from Nodes
1004
Policy Dictate New Instance?
No
Yes
1006
Consult Logical Model To Determine What Type of Instance To Create
1008
Call Resource Manager Allocate Available Node(s)
1010
Call Loader To Configure Node
1012
Record New Instance in Instance-Tracking Database
1014
Notify Management Policy of New Instance

Fig. 10